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in these sections

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 Accession IDs  
 Phenotype/Human Disease  
 Gene Expression  
 Gene Ontology  
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[Sequences](#)  
[Comparative Maps/Data](#)  
[Mouse Maps/Data](#)  
[Mouse Tumor Biology](#)  
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[References](#)  
[Vocabulary Browsers](#)  
[Anatomical Dictionary](#)  
[Gene Ontology \(GO\)](#)  
[Human Disease](#)  
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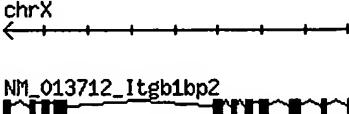
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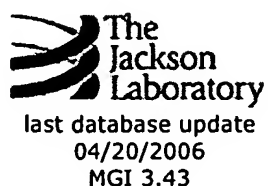
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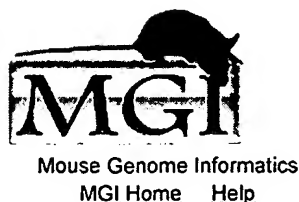
## Gene Detail

Your Input Welcome

Symbol Name ID	<b>Itgb1bp2</b> <b>integrin beta 1 binding protein 2</b> MGI:1353420			Nomenclature History																								
Synonyms	Chordc3, melusin																											
Genetic Map	Chromosome X cytoband D  Mapping data( 2)																											
Sequence Map	96050527-96055141 bp, + strand (From NCBI annotation of NCBI Build 34) <a href="#">UCSC Browser</a>   <a href="#">NCBI Map Viewer</a>  <a href="#">MGI Mouse GBrowse</a>																											
Mammalian homology	human; rat (Mammalian Orthology)																											
Sequences	<table><thead><tr><th colspan="2">Representative Sequences</th><th colspan="2">Length</th><th>Strain/Species</th><th>F</th></tr></thead><tbody><tr><td><input type="checkbox"/> genomic</td><td>26549</td><td><a href="#">NCBI Gene Model   MGI Sequence Detail</a></td><td>4615</td><td>C57BL/6J</td><td><input type="button" value="Go"/></td></tr><tr><td><input type="checkbox"/> transcript</td><td>NM_013712</td><td><a href="#">RefSeq   MGI Sequence Detail</a></td><td>1420</td><td>-</td><td></td></tr><tr><td><input type="checkbox"/> polypeptide</td><td>Q9R000</td><td><a href="#">SWISS-PROT   EBI   MGI Sequence Detail</a></td><td>350</td><td>Not Applicable</td><td></td></tr></tbody></table> <p>For the selected sequences <input type="button" value="download in FASTA format"/> <input type="button" value="Go"/></p> <p>All sequences(14)</p>				Representative Sequences		Length		Strain/Species	F	<input type="checkbox"/> genomic	26549	<a href="#">NCBI Gene Model   MGI Sequence Detail</a>	4615	C57BL/6J	<input type="button" value="Go"/>	<input type="checkbox"/> transcript	NM_013712	<a href="#">RefSeq   MGI Sequence Detail</a>	1420	-		<input type="checkbox"/> polypeptide	Q9R000	<a href="#">SWISS-PROT   EBI   MGI Sequence Detail</a>	350	Not Applicable	
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Phenotypes	All phenotypic alleles(1) : Targeted, other(1)  Mutant animals show normal cardiac structure and function under physiological conditions. When subjected to pressure overload, mutant hearts display contractile dysfunction and dilated cardiomyopathy.																											
Gene Ontology (GO) classifications	Component <a href="#">Z disc</a> Function <a href="#">calcium ion binding</a> , <a href="#">zinc ion binding</a> ... All GO classifications(3)																											
Expression	GXD literature index(1) cDNA source data(23)																											
Other database links	DoTS <a href="#">DT.40176660</a> , <a href="#">DT.99748989</a> UniGene <a href="#">46232</a> TIGR <a href="#">TC1465282</a> , <a href="#">TC1555768</a> NIA Mouse <a href="#">U020069</a>																											



	Gene Index Entrez Gene <a href="#">26549</a>
Protein domains	InterPro ID Description <a href="#">IPR007051</a> CHORD <a href="#">IPR007052</a> CS <a href="#">IPR008978</a> HSP20-like chaperone <a href="#">Graphical View of Protein Domain Structure</a>
Molecular reagents	All nucleic( <a href="#">24</a> ) Genomic( <a href="#">1</a> ) cDNA( <a href="#">23</a> )
References	(Earliest) <a href="#">J:57924</a> Brancaccio M <i>et al.</i> , "Melusin is a new mus specific interactor for beta(1) integrin cytoplasmic domain." J Biol Chem 1999 Oct 8;274(41):29282-8 (Latest) <a href="#">J:93913</a> Kuninger D <i>et al.</i> , "Gene discovery by microarray: identification of novel genes induced during grow factor-mediated muscle cell survival and differentiation." Genomics 2004 Nov;84(5):876-89 All references( <a href="#">6</a> )



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[Sequences](#)  
[Comparative Maps/Data](#)  
[Mouse Maps/Data](#)  
[Mouse Tumor Biology](#)  
[Probes/Clones](#)  
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## References

Query Results – Details

MGI Accession ID: MGI:2448192

J Number: J:81163

Other Accession IDs:

- 22402161 ([MEDLINE](#))
- 12496958 ([PubMed](#))

**Title:** Melusin, a muscle-specific integrin beta(1)-interacting protein, is required to prevent cardiac failure in response to chronic pressure overload.

**Authors:** Brancaccio M; Fratta L; Notte A; Hirsch E; Poulet R; Guazzone S; De Acetis M; Vecchione C; Marino G; Altruda F; Silengo L; Tarone G; Lembo G

**Journal:** Nat Med

**Volume:** 9

**Issue:** 1

**Date:** 2003 Jan

**Year:** 2003

**Pages:** 68-75

**Review Status:** Peer Reviewed

#### Abstract:

Cardiac hypertrophy is an adaptive response to a variety of mechanical and hormonal stimuli, and represents an early event in the clinical course leading to heart failure. By gene inactivation, we demonstrate here a crucial role of melusin, a muscle-specific protein that interacts with the integrin beta(1) cytoplasmic domain, in the hypertrophic response to mechanical overload. Melusin-null mice showed normal cardiac structure and function in physiological conditions, but when subjected to pressure overload-a condition that induces a hypertrophic response in wild-type controls-they developed an abnormal cardiac remodeling that evolved into dilated cardiomyopathy and contractile dysfunction. In contrast, the hypertrophic response was identical in wild-type and melusin-null mice after chronic administration of angiotensin II or phenylephrine at doses that do not increase blood pressure-that is, in the absence of cardiac biomechanical stress. Analysis of intracellular signaling events induced by pressure overload indicated that phosphorylation of glycogen synthase kinase-3beta (GSK-3beta) was specifically blunted in melusin-null hearts. Thus, melusin prevents cardiac dilation during chronic pressure overload by specifically sensing mechanical stress.

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- [Phenotypic Alleles](#) (1)

last database update  
04/20/2006  
MGI 3.43